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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/599,424	08/01/2008	Sheshakamal H. Jayaram	26656-1	8640

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Patent Docket Department  
Armstrong Teasdale LLP  
7700 Forsyth Boulevard  
Suite 1800  
St. Louis, MO 63105

EXAMINER
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PHASGE, ARUN S

ART UNIT	PAPER NUMBER
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1724

NOTIFICATION DATE	DELIVERY MODE
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10/12/2011

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USpatents@armstrongteasdale.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/599,424	<b>Applicant(s)</b> JAYARAM ET AL.	
	<b>Examiner</b> ARUN S. PHASGE	<b>Art Unit</b> 1724	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2011.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 5) ☒ Claim(s) 1-34 is/are pending in the application.
- 5a) Of the above claim(s) 15-27 is/are withdrawn from consideration.
- 6) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 7) ☒ Claim(s) 1-14, 28-34 is/are rejected.
- 8) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 9) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____.                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____.   | 6) <input type="checkbox"/> Other: ____.                          |

### **DETAILED ACTION**

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Election/Restrictions***

This application contains claims 15-27 drawn to an invention nonelected with traverse in the reply filed on 1/28/11. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 28-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Qin et al. (Qin), U.S. Patent 5,662,031.

The Qin patent discloses a device for treating a fluid comprising at least two electrodes for generating an electric field there between, the electrodes having convex electrode surface sections configured such that when assembled in a housing, the convex electrode surface section opposing each other defining there between a biconcave treatment zone for treatment of the fluid and one of the electrodes is configured such that the fluid will circumfuse its surface in order to be introduced into the treatment zone (see figure 2 and col. 5, lines 30-55).

The device of Qin further discloses the housing including a fluid inlet for receiving fluid to be treated and a fluid outlet for allowing treated fluid to be retrieved (see figure 2).

The Qin patent further discloses a fluid treatment chamber for use in the inactivation of microorganisms in fluids, the fluid treatment chamber comprising an electrode assembly having at least two electrodes, the electrodes having opposing convex electrode surface sections forming an electrode gap consisting of a biconcave treatment zone the results of using the device are given little or no patentable weight absent a structural limitation.

The Board of Patent Appeals and Interferences in *Ex Parte Masham*, 2 USPQ 2d 1647 (1987) stated, "a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the structural limitations of the claimed." The device "does not undergo a metamorphosis to a new apparatus merely by affixing instructions thereto on the use."

Accordingly, the claims are rejected.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Qin applied as above in view of Sayre, U.S. Patent 3,691,050.

The Qin patent further discloses that the electrodes are coaxial with one inner electrode and the other an outer electrode (see figure 2). The patent further discloses the primary treatment zone between the inlet and the outlet and located in the midsection (see figure 2).

The patent fails to disclose the modification to the shape of the electrodes to form the facing convex electrode surfaces, i.e., the use of spherical or ellipsoidal shapes. Such modification to shape has been well settled to have been within the purview of the ordinary artisan.

Accordingly, such a limitation would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the shape of the electrodes disclosed in the Qin patent, because such modification to shape has been well settled to have been within the skill of the ordinary artisan unless the modification produces an unexpected result.

The Qin patent fails to disclose the feeding of the solution under the influence of gravity. The Sayre patent is cited to show that such a modification is within the skill of the ordinary artisan. The patent states that the preferred feeding of the solution to the cell is by a pumping system and valve, "however, it will become apparent that a gravity fed system may be accommodated with variations in water flow and pressure" (see col. 2, lines 54-61).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Qin by the teachings of Sayre.

One having ordinary skill in the art would have been motivated to do this modification, because the Sayre patent teaches the modification to feed the cell using gravity is an obvious modification to the use of pumps and valves used by Qin.

Claims 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Qin in view of Sayre as applied to claims above, and further in view of White, U.S. Patent 2,192,249.

The Qin patent is further silent on the overflow feeding of the fluid to the treatment zone and the results of using the convex surface shaped electrodes.

As stated above, the results obtained by the use of the electrodes would have been inherent to the use of the shaped electrodes and/or are given little or no patentable weight in an apparatus claim.

The White patent teaches the use of the overflow feeding as claimed to produce a continuous smooth film for the treatment zone (see page 6, col. 1, lines 1-52).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Qin by the teachings of White.

One having ordinary skill in the art would have been motivated to do this modification, because the White patent teaches the modification to the flow of the fluid into the treatment zone to produce a smooth continuous film.

***Response to Arguments***

Applicant's arguments filed 7/5/11 have been fully considered but they are not persuasive.

Applicants acknowledge that the Qin patent discloses alternating regions of biconcave and biconvex zones through which a flowable food product must pass, then stated "[T]herefore there is no teaching or suggestion in Qin of a biconcave treatment zone.

It is unclear how the Qin patent can on the one hand teach the alternating biconcave and biconvex regions and then be said not to teach the biconcave region.

It appears that applicants are attempting to argue that the alternating regions would negate the clear teaching of a biconcave region. However, the claims are not closed to the alternating regions as claimed. The use of "comprising" opens the claim to further limitations not recited in the claims. Accordingly, the fact that the device includes further alternating regions of biconcave and biconvex regions does not remove the reference or the disclosure therein from meeting the subject matter of the claims.

Applicants recite many reasons why the Qin patent is said to be teaching away from the claimed invention, however, as discussed above, the claims encompass the arrangement of Qin. Accordingly, the claims are rejected.



Likewise, the claims of the pasteurization kit are encompassed by the scalloped treatment face zone of the electrodes of Qin.

With regards to the combination of Qin and secondary references applicant again recite that the Patent fails to disclose the biconcave region. The arguments of above apply here too.

Applicants argue that the change in shape modification would not be within the skill of the ordinary artisan, because the change in shape would change the properties of the electric field.

One having ordinary skill in the art would know that such change of shape to the electrodes would have a change in an electric field. Indeed such a recognition of the change of shape to the electrodes would change the field is a well known phenomena.

Applicants have not shown any evidence that such a modification to shape would present an unexpected change in the device.

Accordingly, the claims stand rejected.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ARUN S. PHASGE whose telephone number is (571)272-1345. The examiner can normally be reached on MONDAY-THURSDAY, 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith D. Hendricks can be reached on (571) 272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1724

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ARUN S PHASGE/  
Primary Examiner, Art Unit 1724

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